

## CLAIMS

### WHAT IS CLAIMED IS:

5           1. A guide wire comprising a core wire having distal, medial and proximal segments, the core wire substantially comprising a non-metallic, non-woven, material.

          2. A guide wire according to claim 1 wherein the core wire distal segment has a diameter which is less than that of the core wire medial and  
10       proximal segments.

          3. A guide wire according to claim 1 wherein the diameters of the core wire distal, medial, and proximal segments are all substantially the same.

          4. A guide wire according to claim 1 wherein the core wire has a polymeric coating thereon which covers substantially the entire length of the  
15       guide wire.

          5. A guide wire according to claim 1 wherein core wire has a tapered segment between the medial segment and the distal segment.

          6. A guide wire according to claim 1 wherein the core wire further comprises a taper which couples the medial segment and the distal segment  
20       and wherein substantially the entire core wire is covered with a polymeric material.

          7. A guide wire according to claim 1 wherein the core wire comprises a polymeric material.

          8. A guide wire according to claim 1 wherein the core wire comprises  
25       a polymeric material and the core wire is substantially completely covered with a second polymeric material.

          9. A guide wire according to claim 1 wherein the distal segment of the core wire has a diameter which is less than that of the medial segment.

10. A guide wire comprising a core wire, the core wire having coupled proximal, medial, and distal segments, the core wire substantially completely comprising a polymeric material.

11. A guide wire according to claim 10 wherein the core wire is coated  
5 with a second polymerical material.

12. A guide wire according to claim 10 wherein the core wire comprises carbon fiber.

13. A guide wire according to claim 10 wherein the core wire comprises polyetheretherketone.

10 14. A guide wire according to claim 10 wherein the core wire is coated with PEBAX polyetherimide.

15. A guide wire according to claim 10 wherein the core wire comprises polyetheretherketone, and the core wire is coated with polyetherimide.

15 16. A guide wire according to claim 15 wherein the core wire distal segment is more flexible than either of the medial segment or the proximal segment.

17. A guide wire according to claim 15 wherein the core wire distal segment is coupled to the core wire medial segment through a tapered  
20 segment and the distal segment has a diameter which is less than that of the medial segment.

18. A guide wire according to claim 10 wherein the polyetherimide coating has a hydrophilic coating thereover.

19. A guide wire comprising a core wire having coupled distal, medial,  
25 and proximal segments, the core wire comprising multiple, helically-wound, non-metallic fibers and a binder resin, the binder resin being uniformly dispersed between the fibers so as to fill any void space therebetween.

20. A guide wire according to claim 19 which further comprises a coil wire disposed about the distal segment.

21. A guide wire according to claim 19 where the non-metallic fibers comprise carbon and the binder resin comprises a vinyl ester.

22. A guide wire according to claim 19 wherein the helically-wound fibers are wound to no more than 10 helices per foot of guide wire length.

5        23. A guide wire comprising a core wire having coupled, distal, medial and proximal segments, the core wire comprising a single helically-wound non-metallic fiber and a binder resin, the binder resin being uniformly dispersed between the helices of the fiber so as to fill any void space therebetween and to provide steerability and torqueability to the guide wire.

10        24. A guide wire according to claim 23 which further includes a coil wire disposed about the distal segment.